

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method for determining parameters of a fluctuating stream of fluid in a pipe using at least three electrodes ~~(S1, E, S2)~~ provided at the periphery of the stream in spaced relationship to each other in the direction of flow, comprising:

characterized in that

providing AC voltage signals ~~(s_s)~~ are fed to a first transmitting electrode configuration located upstream ~~(S1)~~ and to a second transmitting electrode configuration ~~(S2)~~ situated downstream thereof and signals ~~(s_e)~~ received at a receiving electrode configuration ~~(E)~~ that is located between the transmitting electrodes are registered by means of dielectric currents and are subjected to a time-discrete cross correlation, from the results of which the transit times of the fluctuations detected by the electrodes are determined.
2. (Currently Amended) A method as defined in claim 1, ~~characterized in that~~ wherein the AC voltage signals ~~(s_s)~~ are fed to the transmitting electrode configurations ~~(S1, S2)~~ in a temporally controlled manner and the cross correlation is carried out implementing the profile of the temporal control of the transmitted signals.
3. (Currently Amended) A method as defined in claim 1 ~~or claim 2~~, ~~characterized in that~~ wherein an AC voltage signal ~~(s_s)~~ is alternately switched to the transmitting electrodes.
4. (Currently Amended) A method as defined in ~~any one of claims~~ claim 1 ~~to 3~~, ~~characterized in that~~ wherein the at least one first transmitting electrode configuration and/or the at least one second transmitting electrode configuration has a plurality of single electrodes ~~(S₁₁...S₁₈, S₂₁...S₂₈)~~ distributed around the periphery of the stream.
5. (Currently Amended) A method as defined in ~~any one of claims~~ claim 1 ~~to 4~~, ~~characterized in that~~ wherein two first transmitting electrode configurations and two second transmitting electrode configurations are used ~~(Fig. 8a)~~.
6. (Currently Amended) A method as defined in ~~any one of claims~~ claim 1 ~~to 5~~, ~~characterized in that~~ further comprising determining a velocity-distribution profile ~~is determined~~ from the transit times of the fluctuations between the electrodes by means of back projection.

7. (Currently Amended) A method as defined in ~~any one of claims~~claim 1 to 6, ~~characterized in that~~wherein the electrode configurations are provided on a flexible insulating support material and that this material is disposed on the inner or outer surface of a delivery pipe for the fluid.

8. (Currently Amended) A method as defined in ~~any one of claims~~claim 1 to 7, ~~characterized in that~~wherein a common external shield (~~SCH~~) is provided for the electrode configurations.

9. (Currently Amended) A method as defined in ~~any one of claims~~claim 1 to 8, ~~characterized in that~~wherein the supply of the AC voltage signals (~~s_s~~) and the measurement of the received signals (~~s_e~~) are carried out asymmetrically on a common ground.

10. (Currently Amended) A method as defined in ~~any one of claims~~claim 1 to 9, ~~characterized in that~~wherein at least one of the transmitting electrode configurations can be shifted in position in an upstream/downstream direction relatively to the receiving electrode configuration so that the relevant distance can be adapted according to the amplitude of the resulting cross correlation value to optimize the same to the conditions of flow.

11. (Currently Amended) A device for determining parameters of a fluctuating stream of fluid in a pipe using at least three electrodes (~~S1, E, S2~~) provided at the periphery of the stream in spaced relationship to each other in the direction of flow, comprising:

~~characterized by~~

a first transmitting electrode configuration (~~S1~~) located upstream and a second transmitting electrode configuration (~~S2~~) located downstream, and a receiving electrode configuration (~~E~~) located between the transmitting electrodes, these electrode configurations being provided at the periphery of a stream of a fluid passing through a pipe,

and a receiving and evaluation device for detecting the received signals (~~s_e~~) produced by dielectric currents, for carrying out a time-discrete cross correlation and for determining the transit times of the fluctuations detected by the electrodes from the cross correlation values.

12. (Currently Amended) A device as defined in claim 11, ~~characterized in that~~further comprising a driver circuit (~~AST~~) ~~is provided~~ for temporally controlled feeding of the AC voltage signals (~~s_s~~) to the transmitting electrode configurations (~~S1, S2~~).

13. (Currently Amended) A device as defined in claim 11 ~~or claim 12~~, characterized in ~~that~~wherein the at least one first transmitting electrode configuration and/or at least one second transmitting electrode configuration have/has a plurality of single electrodes (~~$S_{11} \dots S_{18} / S_{21} \dots S_{28}$~~) distributed around the periphery of the stream.

14. (Currently Amended) A device as defined in ~~any one of claims~~claim 11 ~~to 13~~, characterized in ~~that~~wherein two first transmitting electrode configurations and two second transmitting electrode configurations are provided ~~(Fig. 8a)~~.

15. (Currently Amended) A device as defined in ~~any one of claims~~claim 11 ~~to 14~~, characterized in ~~that~~wherein the electrode configurations are provided on a flexible insulating support material and that this material is situated on the inner or outer surface of a delivery pipe for the fluid.

16. (Currently Amended) A device as defined in ~~any one of claims~~claim 11 ~~to 15~~, characterized in ~~that~~wherein a common external shield (~~SEH~~) is provided for the electrode configurations.

17. (Currently Amended) A device as defined in ~~any one of claims~~claim 11 ~~to 16~~, characterized in ~~that~~wherein at least one of the transmitting electrode configurations is mounted for displacement in the upstream/downstream direction relative to the receiving electrode configuration.